

Family presence during resuscitation: A narrative review of the practices and views of critical care nurses

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Abstract

Background: The option of family presence during resuscitation was first presented in the late 1980s. Discussion and debate about the pros and cons of this practice has led to an abundant body of international research.

Aim: To determine critical care nurses' experiences of, and support for family presence during adult and paediatric resuscitation, and their views on the positive and negative effects of this practice.

Methods: A narrative literature review of primary research published 2005 onwards. The search strategy comprised an electronic search of 3 bibliographic databases, supplemented by exploration of a web-based search engine and hand-searching.

Results: Twelve studies formed the review. Research primarily originated from Europe. The findings were obtained from a moderately small number of nurses, and their views were mostly based on conjecture. Among the factors influencing family presence during resuscitation were dominant concerns about harmful effects. There was a noticeable absence of compliance with recommended guidelines for practice, and the provision of a unit protocol or policy to assist decision-making.

Conclusion: A commitment to family-centred care, educational intervention, and the uptake of professional guidance are recommended evidence-informed strategies to enhance nurses' support for this practice in critical care.

Keywords: critical care; family presence; narrative review; nurses; resuscitation; views

Implications for clinical practice

- Some 30-years on from the inception of family presence during resuscitation (FPDR), controversy prevails, and widespread implementation is yet to be realised in critical care.
- Education plays an important role in the mastery of knowledge and skills concerning FPDR, and in overcoming resistance in practice.
- Consistency in decision-making is essential and could be achieved through agreed principles and practices for FPDR that are evidence-based, and policy driven.
- Nurses must be prepared to challenge traditions and adversaries that inhibit change, and become a role model of leadership in, and advocacy for the integration of families in critical care.

Introduction

Family presence during resuscitation (FPDR) is a controversial topic spanning three decades. The pioneering work of Doyle et al. (1987) was a catalyst to international research in various contexts, including adult and paediatric intensive care. The potential for in-hospital FPDR is high. Over a 2-year period, 23,554 adult cardiac arrests were reported in 144 acute hospitals in the United Kingdom (Nolan et al., 2014). Adamski et al. (2016) reported a similar incidence of in-hospital cardiac arrests in Poland ($n=22,317$ adults; $n=285$ children) and suggested that estimated figures for Europe are comparable to the United States (US). In the US, the annual incidence of in-

hospital cardiac arrest is about 200,000 cases (AHA, 2018). Several professional organisations of relevance to the community of critical care nurses (CCNs) have endorsed FPDR (AACN, 2016; Fulbrook et al., 2007a; Oczkowski et al., 2015a). However, staff concerns pervade the literature (Colbert and Adler, 2013; Martin et al., 2016) and are a known barrier to family members exercising their choice (Nevins, 2016).

Aim

To determine CCNs' experiences of, and support for family presence during adult and paediatric resuscitation, and their views on the positive and negative effects of this practice.

Methods

We carried out a narrative review of primary research; a form of review designed "to summarize, explain and interpret evidence on a particular topic/question" (Mays et al., 2005, p.S1:11). This type of review covers a wide range of issues within a given topic (Collins and Fauser, 2005) and is considered comprehensive and flexible, allowing for the inclusion of different research designs (Mays et al., 2005). This method was therefore seen to be congruent with the broad review aim, and the outcomes of a preliminary literature search which identified non-experimental quantitative and qualitative descriptive evidence available for review.

Search strategy

A preliminary search for primary research published in the 21st century was carried out to inform the search strategy. The first study to adequately meet the review aim was published in 2005. This information, together with the apparent influence of this publication in the design of subsequent studies provided rationale for searching the literature 2005 onwards. The strategy comprised an electronic search of three databases, supplemented by exploration of a web-based search engine and hand-searching the reference lists of relevant publications. Specific search words, phrases and synonyms were used (Table 1). Duplication of results among the databases gave reassurance about the accuracy of the search (Aveyard, 2014). Study selection was supported by the application of pre-determined inclusion criteria (Table 2). A concept analysis of witnessed resuscitation (Walker, 2006) informed our decision to solely review research investigating FPDR, thus excluding evidence of family presence during invasive procedures. Analyses suggest the two are different experiences, and each may be better understood if regarded as distinct phenomena (Walker, 2006). Phases of the literature search are presented in Figure 1.

Search outcome

Twelve studies formed the review (Table 3). Most ($n=11$) featured a descriptive survey design, and seven studies employed a questionnaire developed by Fulbrook et al. (2005). A qualitative exploratory study (Monks and Flynn, 2014) recruited a purposive sample of nurses with experience of family witnessed resuscitation (FWR) in the critical care units of a regional cardiothoracic centre. This was one of four regional

studies; the other studies being situated nationally ($n=6$) or internationally involving the recruitment of European nurses ($n=2$). Four studies (Fulbrook et al., 2007b; Fallis et al., 2008; Carroll, 2014; de Beer and Moleki, 2012) explicitly stated the inclusion of nurses from paediatric, neonatal, or combined paediatric/neonatal intensive care units.

Evaluating the literature

Due to the inclusive nature of the review, quality appraisal was not carried out to advise study selection. However, to improve the reliability of the narrative review (Haddaway et al., 2015; Byrne, 2016) aspects of the study methods used were appraised with the aid of criteria for evaluating qualitative and quantitative research (McCarthy and O'Sullivan, 2008). The strengths and limitations of each study are reported in Table 3.

Data synthesis

Consistent with the narrative review method, we undertook a process of qualitative data analysis (as opposed to statistical meta-analysis) to develop a synthesised narrative summary of findings across the included studies. Qualitative content analysis is a research method used to interpret the content of text data through the systematic process of coding and identifying themes (Hsieh and Shannon, 2005). Specifically, we adopted a directed qualitative approach to content analysis (Hsieh and Shannon, 2005) using predetermined codes derived from the review aim and relevant research findings. The codes applied during analyses were: experience with, support for, and

perceived effects of FPDR. Three themes, developed by (Walker, 2008) served as sub-codes in relation to the latter, i.e. the effects of FPDR on: (1) the resuscitation team; (2) the resuscitation event; (3) family members. In relation to the perceived effects of FPDR, we only extracted and reported results that represented a majority viewpoint, i.e. over 50%. In the study by Carroll (2014) which investigated FPDR and invasive procedures, we focused on the results for FPDR. In the following section, we present a narrative summary of the review findings, synthesised under themed headings that reflect the review aim.

Review findings

Experience of FPDR

Fallis et al. (2008) reported around a third of respondents (32%) had taken a family member to the bedside during resuscitation or would do so if the opportunity arose. This contrasts with the study by Powers and Candela (2017) in which a majority (95%) of CCNs had experienced FPDR during their careers. Of the total number of respondents across the remaining 10 studies, 35% had experienced FPDR. In five studies, less than half of the respondents reported a positive experience (Badir and Sepit, 2007; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Gutysz-Wojnicka et al., 2018; Köberich et al., 2010). Conversely, Fulbrook et al. (2007b) found that most paediatric nurses had experienced parental presence (70%), of which the majority (74%) reported one or more positive experiences. Having positive experiences of FPDR significantly influenced Polish nurses' views on the negative effects of this practice ($Z = -2.16, p < 0.03$) (Gutysz-Wojnicka et al., 2018).

FPDR by invitation was an infrequent occurrence (Badir and Sepit, 2007; Fulbrook et al., 2005, 2007b; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Gutysz-Wojnicka et al., 2018; Köberich et al., 2010), and 83% did not feel it was necessary (Badir and Sepit, 2007). An exception was a majority of CCNs (68%) who reported experience of initiation or invitation of FPDR (Powers and Candela, 2017). Carroll (2014) found that nurses working in surgical and mixed adult medical/surgical ICU offered family invitations less frequently than nurses in paediatric and medical ICU. It was also reportedly uncommon for nurses to be approached by family members requesting to be present (Badir and Sepit, 2007; Fulbrook et al., 2005, Fallis et al., 2008; Ganz and Yoffe, 2012; Gutysz-Wojnicka et al., 2018; Köberich et al., 2010). CCNs career experience of family requests for FPDR (61%) was notable in the study by Powers and Candela (2017), as was an approach by parents, with 50% paediatric nurses reporting this experience (Fulbrook et al., 2007b).

Support for FPDR

Among the reported findings was a majority view that nurses do not want family members to be present (Badir and Sepit, 2007; Güneş and Zaybak, 2009; Ganz and Yoffe, 2012; Köberich et al., 2010), and that doctors do not want FPDR either (Badir and Sepit, 2007; Fulbrook et al., 2005, 2007b; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Köberich et al., 2010). There was discord with the notion that family members should always be offered opportunity to be present during resuscitation (Badir and Sepit, 2007; Güneş and Zaybak, 2009; Ganz and Yoffe, 2012; Fulbrook et al., 2005; Köberich et al., 2010). Alternatively, most respondents (58%) agreed that

parental presence during resuscitation should be regarded as 'normal practice' (Fulbrook et al., 2007b). A minority of 14% respondents across 7 studies suggested their environment of care had a protocol or policy in place for FPDR (Fallis et al., 2008; Fulbrook et al., 2005, 2007b; Ganz and Yoffe, 2012; Gutysz-Wojnicka et al., 2018; Köberich et al., 2010; Powers and Candela, 2017). de Beer and Moleki (2012) found that CCNs either preferred no written policy (34%) or a written policy prohibiting FPDR (40%). In the five studies that questioned responsibility for decision-making, respondents suggested FPDR should be a team decision (Badir and Sepit, 2007; Fulbrook et al., 2005, 2007b; Güneş and Zaybak, 2009; Köberich et al., 2010). Qualitative responses in one study advocated decisions should be made on an individual basis and ideally taken in advance of a CPR situation (Köberich et al. 2010). Similarly, most nurses (56%) in the study by Carroll (2014) wanted the decision for FPDR to be part of an advance directive. Support for the option of FPDR emanated from Canadian nurses (Fallis et al., 2008), and European paediatric nurses (Fulbrook et al., 2007b). In the latter study, most respondents (54%) felt that nurses wanted parents to be present. Carroll (2014) also found higher perceptions of FPDR among paediatric and medical ICU nurses.

Perceived effects of FPDR on the resuscitation team

Respondent views regarding possible negative ramifications of FPDR on the resuscitation team were abundant. Specifically, CCNs were concerned that FPDR: could lead to problems of confidentiality (Badir and Sepit, 2007; Fulbrook et al., 2005; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Köberich et al., 2010), have medico-legal

repercussions for staff (Badir and Sepit, 2007; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009), cause undue staff distress (Badir and Sepit, 2007), increase staff stress levels (de Beer and Moleki, 2012) and affect staff concentration (Badir and Sepit, 2007; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009). There was also disagreement with the statement that family member presence would positively affect the team performance (Badir and Sepit, 2007; Güneş and Zaybak, 2009; Köberich et al., 2010) or have a positive staff influence (Ganz and Yoffe, 2012). A further view was that family members are more likely to argue with the resuscitation team due a lack of understanding about CPR interventions (Badir and Sepit, 2007; Güneş and Zaybak, 2009; Köberich et al., 2010).

Qualitative comments provided by respondents and analysed by McClement et al. (2009) provided insight into the perceived risks of FPDR for the healthcare team, including liability concerns, feelings of clinical inadequacy, and constraints on staff coping mechanisms such as the use of humour during a CPR event. Nurses who were not supportive of FPDR also expressed concern that family members could distract the healthcare team from their duties (McClement et al., 2009). Monks and Flynn (2014) found the language used by participants was full of terms that reflected distress. The emotional impact of FWR appeared to affect nurses' confidence in their professional abilities and composure during the event (Monks and Flynn, 2014). Respondents who were invited to share additional thoughts relevant to the study by Köberich et al. (2010) described scenarios deemed stressful for the resuscitation team, including occasions when family members became abusive, violent, overwhelmingly distressed, or disturbed other patients. A viewpoint was the need for a dedicated member of staff

to look after the family (Badir and Sepit, 2007; de Beer and Moleki, 2012; Fulbrook et al., 2005; Köberich et al. 2010; McClement et al., 2009), although staffing levels were deemed inadequate for this provision (Badir and Sepit, 2007; Fulbrook et al., 2005; Güneş and Zaybak, 2009; Köberich et al., 2010). Ganz and Yoffe (2012) found no statistically significant relationship between family-centred care (FCC) and FPDR. However, the most significant barrier to the delivery of FCC was respondents' perceptions of a lack of nursing staff.

Perceived effects of FPDR on the resuscitation event

Several studies reported CCNs views of negative effects on the resuscitation event. There was concern that family members would interfere with resuscitation efforts (Badir and Sepit, 2007; de Beer and Moleki, 2012; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Köberich et al., 2010), and had the potential to impede nurses' work at the bedside due to spatial constraints (McClement et al., 2009). It was viewed that bed areas are too small to have family members present (Badir and Sepit, 2007; Fulbrook et al., 2005; Ganz and Yoffe, 2012; Köberich et al., 2010). Nurses also felt that family presence made the decision to stop resuscitation more difficult (de Beer and Moleki, 2012) and that resuscitation teams are more likely to prolong the resuscitation attempt (Badir and Sepit, 2007; Köberich et al., 2010). In contrast, a perceived benefit arising from FPDR was family acceptance of the resuscitation team's decision to discontinue resuscitative efforts (Fulbrook et al., 2005, 2007b; McClement et al. 2009). Three respondents in the survey by Köberich et al. (2010) described incidents where parental presence was helpful in managing the resuscitation, and in guiding decisions

to terminate the resuscitation. The characterization of FPDR as having the potential to humanize resuscitation efforts was reflected in the comments of Canadian nurses who spoke of seeing the person behind the patient (McClement et al., 2009). Monks and Flynn (2014) also illustrated British nurses' feelings of compassion, empathy and humanism when performing resuscitation in the presence of family members. However, FWR events also challenged "*nurses' perceptions of their professional prowess*" (Monks and Flynn, 2014, p.358).

Perceived effects of FPDR on family members

An apparent concern for respondents was the potential for adverse effects on the psychological well-being of family members (Badir and Sepit, 2007; Ganz and Yoffe, 2012; Güneş and Zaybak, 2009; Köberich et al., 2010; McClement et al., 2009) that could be long-term (Badir and Sepit, 2007; Güneş and Zaybak, 2009; Köberich et al., 2010). A further perceived risk was the potential for physical harm during defibrillation procedures (McClement et al., 2009), and concern that comments (Badir and Sepit, 2007; Ganz and Yoffe, 2012; Fulbrook et al., 2005, 2007b; Köberich et al., 2010) or certain decisions made during the resuscitation (Badir and Sepit, 2007) might upset family members. Conversely, respondents acknowledged positive outcomes of FPDR such as: knowing that 'everything is being done' for the patient (Fulbrook et al., 2005, 2007b; Köberich et al., 2010; McClement et al. 2009); retrospectively being satisfied that 'everything had been done' (de Beer and Moleki, 2012) and decreased likelihood of developing distorted images or wrong ideas about the resuscitation process (Fulbrook et al., 2005, 2007b). Nurses considered that it was important for family

members to be able to share the patient's final moments (Fulbrook et al., 2005, 2007b; McClement et al., 2009), that presence strengthened nurse/family bonds (Fulbrook et al., 2007b; Monks and Flynn, 2014) and was helpful to families in their grief (de Beer and Moleki, 2012; Fulbrook et al., 2005, 2007b).

Discussion

This review of primary research revealed predominantly negative views regarding the practice of FPDR. CCNs reported an array of concerns about harmful effects, yet notably speculative in the absence of experiencing FPDR in practice. It seems reasonable to contemplate that members of the interprofessional team may have adversely influenced nurses' views. In studies that have compared the attitudes of critical care professionals, it is known that doctors tend to show less support towards FPDR than nurses (Grice et al., 2003; Jarvis 1998; Leung and Chow, 2012; McClenathan et al., 2002). Submissive cooperation could also be a consequence of overly authoritarian leadership during resuscitation (Tschan et al., 2014). Most studies originated in Europe, yet the findings revealed gaps and shortcomings in the uptake of, and compliance with the joint position statement of three European critical care organisations (Fulbrook et al., 2007a).

Education plays an important role in overcoming resistance to FPDR, and in the provision of essential preparation for practice (Powers, 2017). Intervention studies involving CCNs (Bassler, 1999; Carter and Lester, 2008; Powers and Candela, 2016) have reported an association between education and increased support for FPDR. Experiential learning techniques could help nurses to overcome feelings of anxiety

when performing resuscitation in the presence of others. Simulation is a positively regarded method to: develop competence in the implementation of FPDR (Porter et al., 2001); facilitate attitudinal and behavioural change (Mian et al., 2007); diffuse evidence-based practice guidelines at the point of care delivery (Aebersold, 2011), and to resolve practical dilemmas (Lateef, 2010). A quasi-experimental study by Curley et al. (2012) found the implementation of formal practice guidelines and corresponding interprofessional ICU staff education involving high-realism simulation had a positive impact on clinicians' perceptions and practice when providing parents with options and support during invasive procedures and/or resuscitation. Pye et al. (2010) also reported increased comfort with FPDR among paediatric nurses who participated in simulation training.

Key components of person-centred care, such as autonomy, informed choice, and shared decision-making (Manley et al., 2011) appeared undermined in the review findings, and the intensity of resistance to family presence during adult resuscitation was indicative of nurse-centric views. FPDR in the ICU fulfils the mandates of patient- and family-centred care (Beesley et al., 2016; Davidson et al., 2017; Olding et al., 2015) and successful FPDR initiatives (Doolin et al., 2011; Hergott et al., 2011; Mureau-Haines et al., 2017; Pasek and Licata, 2016) are inspiring examples of family-inclusive care. A renowned commitment to family-centred critical care in paediatrics (Meert et al., 2013; Mitchell, 2016) could account for the different perceptions of FPDR among nurses working in adult and paediatric ICUs. The review findings point to an increased likelihood of parental presence during the resuscitation of a child compared to family presence during the attempted resuscitation of an adult. A grieving mother who was

denied access to her 23-year-old daughter spoke of being 'plagued' and 'tormented' in the knowledge that she was not with her daughter as she died (Gregory, 1995). Variation in practices raises an ethical question of parity for parents of an adult child requiring resuscitation.

A significant concern is the reported high number of settings without a written protocol or policy for FPDR to aid decision-making. Contrary to CCNs concerns about detrimental effects of FPDR, a large cohort study determined that a hospital policy allowing for FPDR did not negatively affect the outcomes and quality of in-hospital resuscitative efforts (Goldberger et al., 2015). Further, Oczkowski et al. (2015b) found moderate-quality evidence in relation to adults and low-quality evidence in children to suggest that the offering of FPDR does not affect resuscitation outcomes (patient mortality and quality of the resuscitation) and may improve psychological outcomes for family members who were present during an adult resuscitation attempt. Efforts must be made to close the evidence-practice gap by attending to factors that impact the translation of FPDR research into clinical nursing practice. Curtis et al. (2016) provide relevant evidence-informed suggestions, and stress the importance of understanding the barriers to, and facilitators of, human behaviour change. Participatory research involving those who have a vested interest in the issues under study (Jagosh et al., 2012) appears highly relevant to gaining stakeholder consensus on the practice of FPDR in critical care.

Limitations

A narrative review method is not without criticism, with shortcomings attributed to being less systematic than other forms of literature review. We attempted to address professed weaknesses by adopting transparent procedures for literature selection. Both the criteria and systematic selection process were made clear to the reader, as was the process of data synthesis. The review provided an intra-professional perspective of FPDR and should therefore be considered in the context of the wider multidisciplinary team. The family and surviving patients' perspectives of FPDR are also important to developing a holistic understanding of this critical event. A reliance on convenience sampling rendered the results vulnerable to selection bias and influences. This observation, together with response rates that mostly fell below the commonly regarded good of 75% and above (Moule et al., 2017) limits the generalizability of the review findings.

Conclusion

Through participation in research, nurses have provided valuable insights into the prevailing issues concerning FPDR in critical care. An appreciative understanding of practices and views is a key step to identifying and establishing appropriate tactics for leveraging change. A commitment to family-centred care, educational intervention and the uptake of professional guidance are recommended strategies to enhance nurses' support for this practice. Further research is necessary for improved representation of the experiences and views of nurses based in adult, paediatric and neonatal ICUs.

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Table 1 Search words, phrases and synonyms

Topic		Family presence during resuscitation (or) Family witnessed resuscitation
	(and)	
Environment		Intensive care unit (or) ICU (or) critical care
	(and)	
Participants		Nurse (or) nurses (or) nursing

Table 2 Inclusion criteria

Peer-reviewed primary research
Published between January 2005 and June 2018
Written in English
Study sample comprised critical care nurses
Focused on family presence during adult or paediatric resuscitation
In-hospital clinical settings
Data characterised critical care nurses' practices/views

Table 3 Overview of studies included in the review

Author(s)/ Year/Origin	Study questions/Aim/Objectives	Sample	Design/Method Response rate	Strengths/Limitations
Fulbrook et al. (2005) Europe	What are the experiences and attitudes of European CCNs to the presence of family members during CPR of an adult relative? What are the differences in nurses' attitudes to family presence with respect to (a) decisions about resuscitation, (b) processes of resuscitation, and (c) outcomes of resuscitation?	Convenience sample. European CCNs attending the European Federation of Critical Care Nursing Associations (EfCCNa) conference. Most participants were based in ICU (76%).	Survey Questionnaire RR 55% (n=130) 6 questionnaires excluded (n=124)	Purposefully designed questionnaire based on existing literature to ensure content validity. Produced in four languages. Efforts were made to check the accuracy of the translation and content. Questionnaire was not piloted. Results only representative of the attitudes/ experiences of conference delegates.
Badir and Sepit (2007) Turkey	What are the experiences of CCNs regarding the presence of family members during CPR? What are the opinions of CCNs regarding the presence of family members during CPR?	Convenience sample. CCNs working in various ICU specialities at 10 hospitals. Most participants were practice-based (89%).	Survey Questionnaire RR 68% (n= 278)	*Utilised existing questionnaire. Instrument was pilot tested in the research setting. Results limited to CCNs at participating research and teaching hospitals in Istanbul. Participant responses were assumed to be valid and reliable.
Fulbrook et al. (2007b) Europe	What are the experiences of European paediatric CCNs of the presence of parents during CPR of a child? What are attitudes of European paediatric CCNs to parental presence with respect to: (a) decisions about resuscitation; (b) processes of resuscitation; and (c) outcomes of resuscitation?	Convenience sample. European Paediatric CCNs attending European Society of Paediatric and Neonatal Intensive Care (ESPNIC) conference. Participants worked in PICU or NICU or a combined PICU/ NICU.	Survey Questionnaire RR 65% (n=103) 5 questionnaires excluded (n=98)	*Utilised existing questionnaire. Questions reworded with respect to children and parents; written in four languages; each translation reviewed/ verified by CCNs fluent in the relevant languages to ensure reliability. Majority of the informants were based in PICUs. Results only representative of the attitudes/ experiences of conference delegates.

Table 3 (Cont.) Overview of studies included in the review

Author(s)/ Year/Origin	Study questions/Aim/Objectives	Sample	Design/Method/ Response rate	Strengths/Limitations
Fallis et al. (2008) Canada	To explore the practices and preferences of CCNs regarding the need for written policies regarding FPDR. To examine the extent to which formal guidelines/policies for FPDR exist in hospitals in which CCNs work. To explore the level of awareness of Canadian CCNs regarding the existence of the Canadian Association of Critical Care Nurses (CACCN) (2005) position statement related to FPDR.	Convenience sample. Members of CACCN. Most worked in a teaching hospital (68%) and cared for adult patients (85%). The remainder cared for newborns/children or worked in a combined adult/child unit.	On-line survey Questionnaire RR 48% (n=450)	Utilised questionnaire with established content validity and clarity. Original 30-item tool was modified to reflect the context and focus of the study, i.e. FPDR, not invasive procedures. Pilot tested. Limited generalizability. Practices and preferences of the majority of CACCN members are not represented in the results. Possible that some may have responded to the survey more than once.
McClement et al. (2009) Canada	To explicate salient issues about the practice of FPDR identified by CCNs who responded to the qualitative portion of the survey (Fallis et al., 2008).	As above.	Qualitative comments (n=252/450)	Valuable experiential insights. Two analysts' independently coded data and consensus achieved. Method of data collection precluded clarification/verification of text entries.
Güneş and Zaybak (2009) Turkey	To determine the experiences and attitudes of the CCNs working in Izmir concerning family presence during CPR.	Convenience sample. CCNs working in a variety of ICUs and emergency services of two university hospitals.	Survey Questionnaire RR 53% (n=135)	*Utilised existing questionnaire. The questionnaire was translated into Turkish. Content validity established. Confirmed internal consistency reliability for sections 2 and 3; Cronbach's alpha co-efficient 0.97 and 0.91 respectively. Results limited to CCNs at participating university hospitals in Izmir.

Table 3 (Cont.) Overview of studies included in the review

Author(s)/ Year/Origin	Study questions/Aim/Objectives	Sample	Design/Method/ Response rate	Strengths/Limitations
Köberich et al. (2010) Germany	What are the experiences of German intensive care nurses regarding FWR? What are the attitudes of German intensive care nurses towards FWR?	Convenience sample. Intensive care nurses, who attended a congress held in Germany. CCNs worked in a variety of critical care settings including interdisciplinary, medical, surgical ICUs; anaesthesia and ED.	Survey Questionnaire RR 42% (<i>n</i> =166)	*Utilised existing questionnaire. The questionnaire was translated into German and reviewed by two of the investigators for comprehensibility, accessibility and practicability. Qualitative responses generated additional insights. Results only representative of congress delegates. Method of data collection precluded clarification/verification of written responses.
de Beer and Moleki (2012) Saudi Arabia	What are the CCNs' perceptions towards family witnessed resuscitation? What are the factors contributing towards these perceptions?	Convenience sample. CCNs from seven critical care departments at one tertiary hospital; NICU, coronary care PICU, cardiothoracic ICU, two medical-surgical ICUs, one cardiovascular telemetry unit, one surgical recovery unit.	Survey Questionnaire RR 70% (<i>n</i> =70)	Purposefully designed questionnaire with items derived from the literature. Comprised closed and open-ended questions. Pre-tested and revised. Established reliability of the instrument; Cronbach's alpha coefficient of 0.824 following item reduction. Results are primarily presented as descriptive statistics. Limited detail of written responses to open-ended questions. Single site study limits generalizability of results. Most respondents cared for adult patients.

Table 3 (Cont.) Overview of studies included in the review

Author(s)/ Year/Origin	Study questions/Aim/Objectives	Sample	Design/Method/ Response rate	Strengths/Limitations
Ganz and Yoffe (2012) Israel	To determine what nurses' attitudes are toward (a) FCC (b) FPDR. To determine whether there is a relationship between nurses' attitudes toward family centred care and FPDR.	Convenience sample. RNs who worked in the general intensive care, cardiovascular intensive care and cardiac care units in two different large tertiary-care medical centres.	Correlational, descriptive survey Questionnaires RR 86% (n=96) 3 questionnaires excluded (n=93)	Utilised four existing questionnaires; demographic data; 2 related to attitudes toward FCC; *2 related to FPDR. Translated into Hebrew. Pilot tested. Confirmed internal reliability for each questionnaire in relation to study sample. The use of multiple statistical tests identified as creating a potential threat to increase type 1 statistical errors.
Carroll (2014) US	Are there differences in nurses' perceptions of self-confidence and risk/benefit for FPDR (and for family presence during invasive procedures) by practice environment? What are the relationships among demographic variables and nurse perceptions of FPDR and invasive procedures?	Convenience sample. RNs working in 9 ICUs within a large academic medical center representative of surgical, medical, paediatric and mixed medical/surgical ICUs.	Survey Questionnaire RR 39% (n=207)	Questionnaire comprised two scales with confirmed content validity and reliability. Distinct results for FPDR and presence during invasive procedures enabled separate evaluation of the two practices. Single site study limits generalizability of results. Most CCNs were from surgical ICUs, (i.e. surgical, cardiac surgical, burn units).
Monks and Flynn (2014) UK	Aim: To explore critical care nurses lived experience of FWR. Objectives: To identify any associated professional nursing issues, and consider the implications that these issues may have for nursing and research in the critical care environment.	Purposive sample. CCNs with experience of FWR; based in a critical care unit within a regional specialist cardio-thoracic centre in the North West of England.	Phenomenology Semi-structured interview (n=6)	Appropriate study design suggestive of hermeneutic phenomenology. Findings provide valuable experiential insights. Evidence of applied techniques for ensuring credibility of the research. Single site study; transferability of study findings was not addressed.

Table 3 (Cont.) Overview of studies included in the review

Author(s)/ Year/Origin	Study questions/Aim/Objectives	Sample	Design/Method/ Response rate	Strengths/Limitations
Powers and Candela (2017) US	To describe FPDR practices among CCNs as well as the prevalence of FPDR policies and education. [Data collected during the pretest of a quasi-experimental study to determine the impact of online learning on CCNs perception and self-confidence for FPDR.]	Convenience sample. RNs working in adult critical care units in the US.	Survey Questionnaire (n=124)	Purposefully designed 25-item demographic and professional attribute survey, based on a review of the literature. Method of online recruitment may have led to sampling bias. A small sample with a lack of gender and racial/ethnic diversity placed limits on the generalizability of results.
Gutysz- Wojnicka et al. (2018) Poland	To determine the experiences of FPDR from anaesthesia and intensive care nurses attending the conference of the Polish Association of Anaesthesia and Intensive Care Nurses (PTPAiIO). To explore delegates' perceptions of the risks and benefits associated with FPDR. To establish factors influencing delegates' general view of the risks and benefits of FPDR.	Convenience sample. Conference delegates; ICU nurses working in adult ICUs and non-ICU nurses working in other acute clinical settings.	Cross-sectional survey Questionnaire RR 33% (n=240) Of the 240 respondents, (47%, n=113) were ICU nurses	*Utilised existing questionnaire. Validation of the Polish version of the tool was undertaken to establish construct validity and reliability. Reported the results of ICU and non-ICU nurses separately. Results only representative of conference delegates experiences and views.

Abbreviations CCNs, Critical Care Nurses; ED, Emergency Department; FWR, Family-Witnessed Resuscitation; FCC, Family-Centred Care; ICU, Intensive Care Unit; FPDR, Family Presence During Resuscitation; NICU, Neonatal Intensive Care Unit; PICU, Paediatric Intensive Care Units; RNs, Registered Nurses; RR, Response Rate

*Utilised existing questionnaire (Fulbrook et al., 2005).

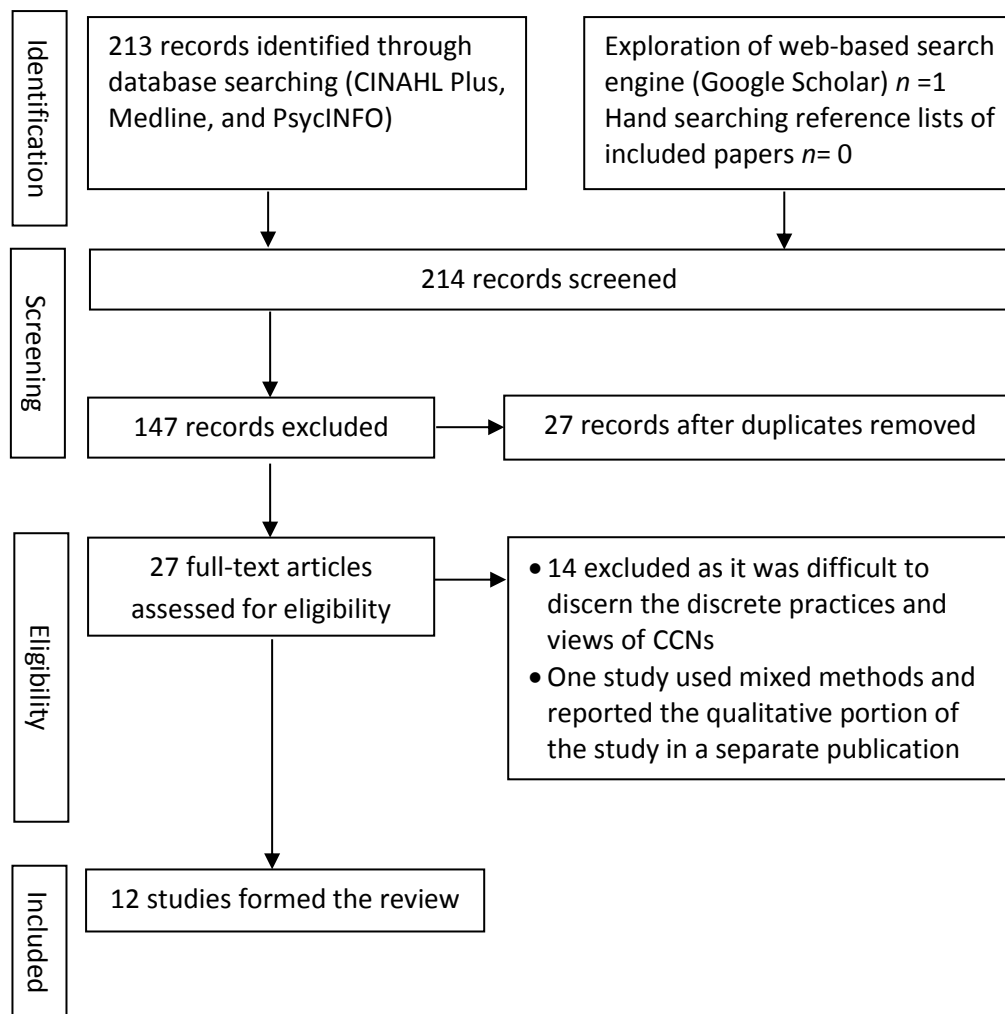


Fig. 1. Flow diagram of the article selection process, based on Moher et al. (2009)